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Citizens' Bulletin

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DEP Citizens' Bulletin

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Editor's Note

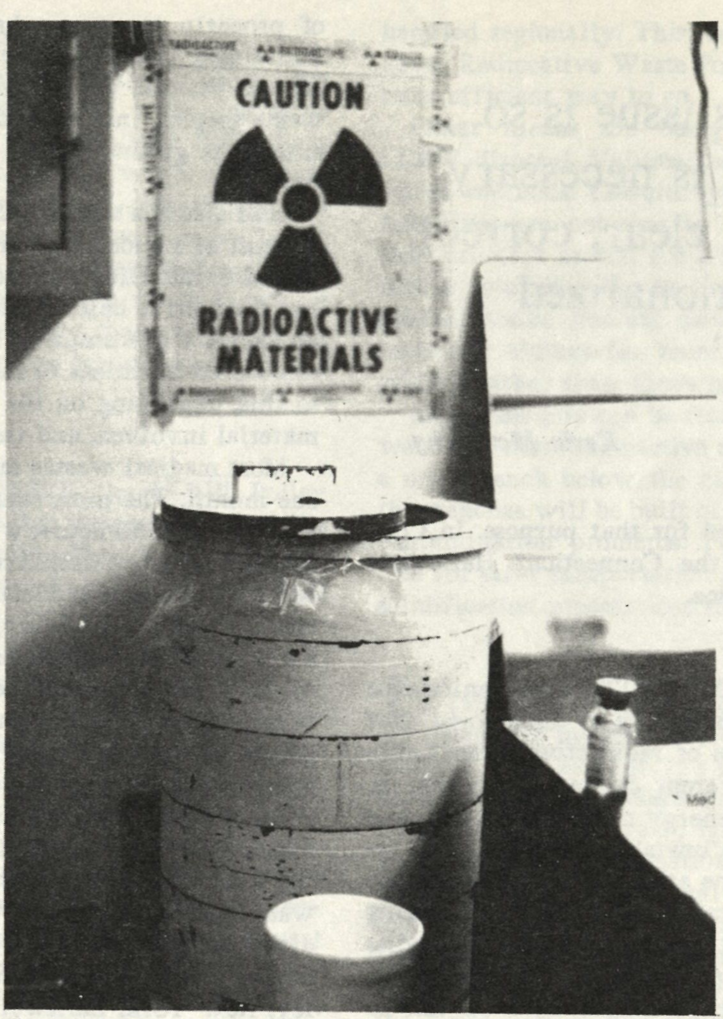
In this month's *Citizens' Bulletin*, we begin a new section profiling members of the DEP. For anyone who spends any time around this department, it soon becomes clear that there is something unique about the DEP; if you spend a little more time, you understand that you are dealing with people who, very simply, like their work. You see it in park managers, who take meticulous care of their campgrounds and are always improving their programs; you see it in conservation officers, whose concern for Connecticut wildlife is such that a 24-hour day is standard operating procedure; you see it in geologists at the Natural Resources Center, the field inspectors at the Hazardous Materials Unit, the firefighters in the Forestry Bureau, the naturalist/teachers in the Education Section, and on and on.

What you see, if you spend any time around this department, is a lot of talented people working their hearts out. It's probably true that these people are not adequately compensated for their long hours, for their brains, for their sweat and blood, and most could easily move into more lucrative areas if they were so inclined. But, that's really not the point, because having a job that you love, a job that your conscience tells you is right, can make a lot of things bearable.

The first profile will be on Ted Barbieri. Ted is, quite simply, one of the most universally liked and respected people at the DEP. We're reasonably sure our readers will like him too.

Hope you enjoy our Christmas issue. Have a happy holiday season.

R.P.



Connecticut and New Jersey are the two remaining states committed to abiding by the provisions of Northeast Interstate Low Level Radioactive Waste Compact. (Photo: M. Carter)

Low Level Radioactive Waste: Who's Going to Get It?

by
Margaret A. Carter
Environmental Intern

ONE OF THE MOST CRITICAL environmental issues facing Connecticut residents today is the pending designation of a site for the disposal of low level radioactive waste," says Kevin McCarthy, director of DEP's Radiation Control Unit. "Because this issue -- and all matters concerning radiation -- is so important, it is necessary that we have clear, correct, and unsensationalized information."

There are now two states -- Connecticut and New Jersey -- which are committed to abide by the provisions of the Northeast Interstate Low Level Radioactive Waste Compact. Within that Compact, there are a number of options now being considered. First, there is the "single host state" option, in which only one state provides a facility; second, there is the "dual host state" option, in which both states provide facilities; and third, there is the "extra regional solution," in which waste is disposed of outside the Northeast Compact region. The determination of which option will be used must be made and approved by January 1, 1988. Then, once that has been accomplished, the specific site will be determined by a gov-

"Because this issue is so important, it is necessary that we have clear, correct, and unsensationalized information."

Kevin McCarthy

ernmental body appointed for that purpose. In Connecticut, that body is the Connecticut Hazardous Waste Management Service.

TO GRASP THE COMPLEXITY and significance of this issue, it is necessary to understand that there are different levels of radioactivity, with different benefits and different dangers. Radiation is, very simply, the excess energy released by an atomic nucleus when it is in an unstable condition. This release of energy allows the atom to return to a stable condition. In this process, however, radiating sub-atomic particles may come in contact with living tissue, causing sickness, genetic damage, or even death.

Controlled and directed, nuclear radiation can be used for human benefit, such as in the treatment of cancer. Uncontrolled, this radiation may bring about health-threatening tumors. Exposure to very high levels of radioactivity can cause immediate illness or death, while exposure to lower levels of radiation may go on over extended periods of time – even years – without effects becoming manifest. It is important to understand, however, that *any* exposure for *any* length of time to *any* level of radioactivity does in fact involve the element of risk.

The nuclear age is now several decades old. Nuclear power plants produce energy in response to human needs and desires. Medical testing has used radiation through x rays, cancer treatments, and lung and heart capacity testing. Industry uses radioactivity in paper and plastic thickness gauges, in determining the amount of fat in hamburgers and the quality of metal alloys. Radioactivity is used in research and, as we know so well, in the military. Its use is extensive throughout all levels of society, and frequently in unexpected areas.

MOST USES OF RADIOACTIVITY produce radioactive waste. The waste must be disposed of properly to ensure that man does not come unknowingly into contact with it. Equally as dangerous are the hazards which might result from radioacti waste seeping into ground water. Once radioactivity enters the ground water, it is fundamentally out of control.

Half-life is a term for the time required for a given amount of radioactive material to decay to half of its initial value. Each radioactive isotope has a different and distinctive half-life. Most rad-waste must be contained for a minimum of 10 half-lives before it can be considered harmless to humans. There are exceptions to this, depending on the specific type of radioactive material involved, and the amount.

Most medical wastes must be contained for at least one month. The most common half-life used in medical testing is 60 hours, which is the half-life of technetium. After 10 half-lives, the waste is considered to be non-hazardous and may then be treated as normal trash. Research, industry, and nuclear power plants are now producing wastes that must be contained for up to a few hundred years. High level radioactive waste, such as that produced by the fuel in nuclear power plants, may have much longer half-lives, and must be isolated for approximately 10,000 years.

Low level radioactive waste is all radioactive waste other than the high level spent nuclear fuel of the nuclear power plants and certain defense-relat waste. Thus far, in the United States, low level dioactive waste has been accepted at six disposal sites: Maxey Flats, Kentucky; Sheffield, Illinois; West Valley, New York; Barnwell, South Carolina; Richland, Washington; and Beatty, Nevada. The method of disposal at these sites has involved placing the waste in trenches 20 to 50 feet deep, 30 to 50 feet wide, and 600 feet long. The sides and bottoms are sloped to catch any water that enters the trench. Pipes catch the water and pump it out before it can reach the ground water. When the trench is filled with radioactive wastes, it is covered with a mound of dirt, which is also sloped so that the rainwater is washed off. Spaces between the wastes are filled with dirt so that the top will not collapse, or "slump," which would allow water to enter. These trenches must, by law, be monitored for 100 years to ensure human safety.

Although McCarthy feels the current technology is adequate to keeping the waste under control given the existing conditions, he does feel that future sites with different conditions will require additional barriers and an enhanced technology. "The system is characterized by redundancy," says McCarthy, "which means that there is more than one means of ensuring safety at any given point. The safety system involves redundant piping, so while it is desired that no mi haps or seepage occur, the assumption is that they wi occur, and therefore appropriate corrective measures are available."

WHILE THE SHEFFIELD SITE was filled to capacity in 1976, it has been determined that the three remaining sites have enough usable space to meet LLRW disposal needs up to the year 2020. "It is important that we understand that while additional disposal options are being considered, present methods of disposal are adequate to our present needs," says McCarthy. "The reason we are now seeking other options is that the governors of the states in which sites are now located decided that they did not want to be considered the radioactive dumping ground for the rest of the country."

IN 1980, CONGRESS PASSED the LLRW Policy Act which: 1) maintains that states are responsible for any LLRW generated inside their borders; 2) recommends that states form compacts; 3) maintains that if states do form compacts, they are allowed to exclude out-of-region waste by January, 1986.

Connecticut joined the states of Maryland, Delaware, and New Jersey to develop "a compact language," terms which described common interests and requirements. Each state's Legislature ratified the Compact in 1983. New deadlines and milestones for action were set by the 1985 LLRW Amendments Act. The first milestone states that any state not entering a compact by June 30, 1986, would be penalized. Connecticut had formally entered the Northeast Compact in January, 1986.

Under the provisions of the Northeast Compact, each of the four states -- Maryland, Delaware, New Jersey, and Connecticut -- was equally at risk. Each state stood as good a chance as any other for being chosen as host state. "Then," said McCarthy, "Maryland and Delaware got an offer they couldn't refuse." The state of Pennsylvania offered these two states an opportunity to enter into a separate compact which would guarantee that they would never be chosen as the host state. With that kind of a guarantee, McCarthy said, it was very reasonable that Maryland and Delaware drop out of the Northeast Compact.

Which then left two states.

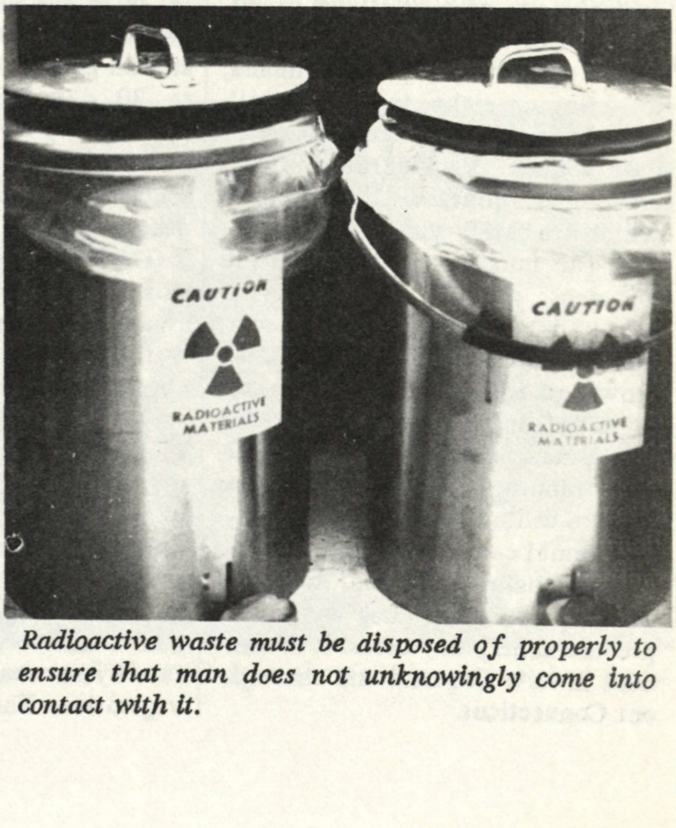
New Jersey and Connecticut are now alone in the Northeast Compact. There is a 50-50 chance that Connecticut will be chosen as the host state in January. And that is how things stand right now.

LOOKING INTO THE FUTURE, by January 1, 1990, the host state must apply to the federal Nuclear Regulatory Commission (NRC) for a licence for the specific disposal site. With the eventual opening of the site, all low level radioactive waste will be handled regionally. This, according to the 1980 Low Level Radiocative Waste Policy Act, is the safest and most efficient way to go.

Other means are being introduced to improve LLRW disposal. Volume reduction is one of the preferred methods. Certain types of wastes with short half-lives are not sent to the disposal site. Instead, they are kept on-site for a period of 10 half-lives, at which point they can be disposed of as non-hazardous, normal trash. Nuclear power plants decontaminate tools and clothes for reuse, which is essentially recycling rather than throwing away.

Improvements can be found at the disposal sites as well. The more radioactive of the wastes are placed in a mini-trench below the main trench. In the future, the trenches will be built of concrete to prevent water contamination problems. Further, wastes are solidified for safer tansportation and disposal, although the solidification process does increase the waste volume.

IF THE BENEFITS of radioactivity continue to be desired by modern society, the risks also must be realized. The issue of the disposal of low level radioactive waste is indeed a critical one; we can err as much by being blissfully ignorant of what is at stake as we can by over-sensationalizing and making emotional rather than rational responses. If finally the low level radioactive waste disposal site is to be in Connecticut, it is vital that Connecticut residents take an active role in ensuring the safety of the site, and the protection of our state's residents and environment. For that, a correct understanding is necessary. We hope this article is a step in that direction. ■



Radioactive waste must be disposed of properly to ensure that man does not unknowingly come into contact with it.

DEP Wildlife Information Series

Common in New England and throughout Connecticut, the muskrat is found across the United States, except in dry areas.

Keep On Ramblin'

On the road with Connecticut's muskrat

THE MUSKRAT (*Ondatra zibethica*) is a large, stout rodent the size of a small house cat, but rat-like in appearance. Its total length ranges from 18 to 25 inches, including an eight- to 11-inch tail. Its weight varies between two and four pounds. A muskrat's head is broad and blunt, with short ears which are barely visible beyond the fur. The muskrat is covered by a soft, dense, grayish-brown underfur which is practically waterproof. The underfur is covered by long. brown guard hairs. The tail is nearly naked and somewhat flattened on the sides. The muskrat has a valvular mouth, which allows the lips to close behind the front incisors so the animal can gnaw underwater.

The muskrat is found throughout the United States except in predominantly dry areas. It is common in New England and throughout Connecticut.

BREEDING TAKES PLACE from late March through July, with the young being born between April and August. The gestation period for the muskrat is 28 to 30 days. It is a polygamous animal and the female has from two to four litters per year. The life span of the muskrat is three to four years.

These animals generally inhabit slow-moving waters, such as swamps, marshes, lakes, and ponds with an abundant supply of aquatic vegetation. They make their homes in bank dens or lodges similar to those of the beaver but smaller in size. They often construct dens in stream banks by burrowing with their sharp front claws. The dens are complete with ventilation holes, dry chambers, and underwater tunnels which are hidden at the surface by shrubs, branches, and thick vegetation. The lodges, constructed with aquatic plants, brush, and mud, are usually situated on a foundation of brush, on a stump, or are occasionally built up from the bottom of the pond. Several small feeding huts, similar to but less complex than the lodges, may be constructed within the muskrat's territory. Here the animal will periodically feed while protected from predators and harsh weather.

Diets consist of a large variety of plant and animal matter. Cattails, arrowheads, and duckweed are only a portion of the aquatic plants consumed; corn, clover, alfalfa, and fruit are also readily eaten. In addition, muskrats will consume animal matter, such as crayfish, snails, frogs, insects, and slow-moving fish, particularly when vegetation is in short supp[illegible]

Muskrats are active throughout the year and, although mainly nocturnal, are sometimes seen during the day. They are susceptible to wind and cold and spend more time in their dens during the winter. Although several may share a lodge during the winter, they are highly territorial and aggressive toward each other. In fact, a female may kill newly-weaned young in her effort to drive them away before the arrival of a new litter. The muskrat's normal home range is usually within 200 yards of the den, although it may travel several miles over land in search of suitable habitat.

With its webbed hind feet acting as paddles and tail as a rudder, the muskrat swims at a speed up to three miles per hour, and can even swim backwards. The muskrat can give a warning slap with its tail, similar to the beaver, and remain submerged for as long as 20 minutes.

THE MUSKRAT is often of benefit to the property owner, since its activities may modify the habitat, making it more attractive to a wide variety of wildlife. The muskrat also leads all North American wild furbearers in the number of animals caught and total pelt value.

SOMETIMES muskrats can be considered a nuisance to the landowner if they are damaging a garden or crops. A stone barrier or fence may solve the problem, although planting crops beyond the animals' normal 200-yard home range would probably be more effective.

Most often, muskrat damage is associated with their burrowing and digging activities, which can weaken impoundment embankments. The following suggestions can help reduce muskrat damage to existing impoundments or can be applied during construction of an impoundment as preventive measures:

1. Forming gentle slopes (a 3:1 ratio or less) on shorelines will prove less attractive to muskrats than steep slopes.
2. Constructing a 10-foot wide shelf of earth projecting from the face of the dam into the impoundment at water level will not only create an effective muskrat barrier, but will strengthen the dam and reduce the erosion caused by wave action.
3. Rip-rapping areas susceptible to damage also creates an effective muskrat barrier. Stone should be at least six inches thick and should be placed three feet below the water level and extend to one foot above water level.
4. Placing one to two inches of galvanized mesh wire on the inside of the dam will prevent muskrat damage. Wire should extend from three feet below the water level to one foot above.

When damage is severe, muskrats can be trapped during the regulated trapping season. State regulations must be followed. Live-trapping and removal may also be effective.

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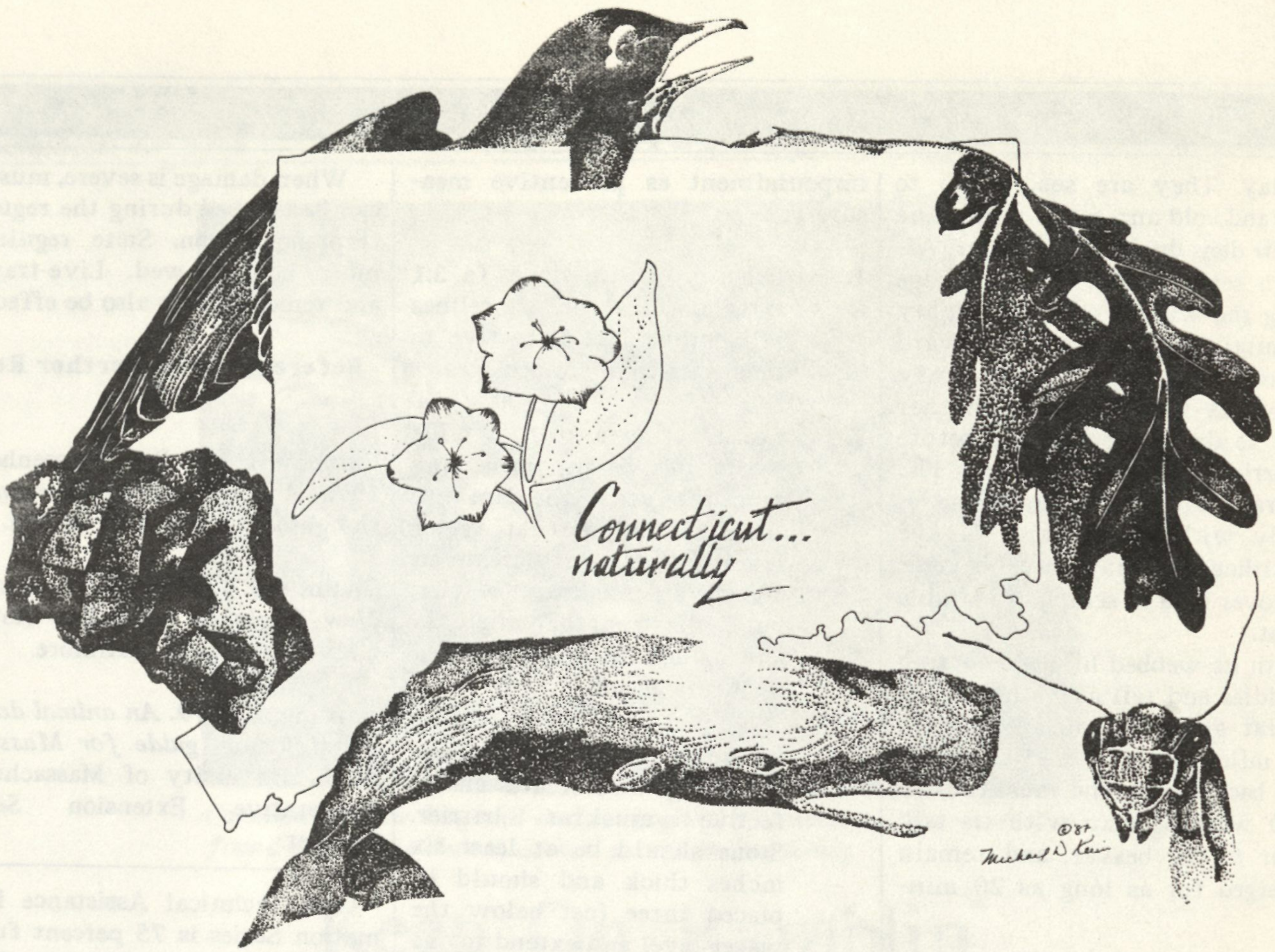
The Technical Assistance Information Series is 75 percent funded by Federal Aid to Wildlife Restoration — the Pittman-Robertson (P-R) Program. The P-R Program provides funding though an excise tax on the sale of sporting firearms, ammunition, and archery equipment. The remaining 25 percent of the funding is matched by the Connecticut Wildlife Bureau. ■

With a gestation period of 28 to 30 days, the female muskrat has from two to four litters per year.



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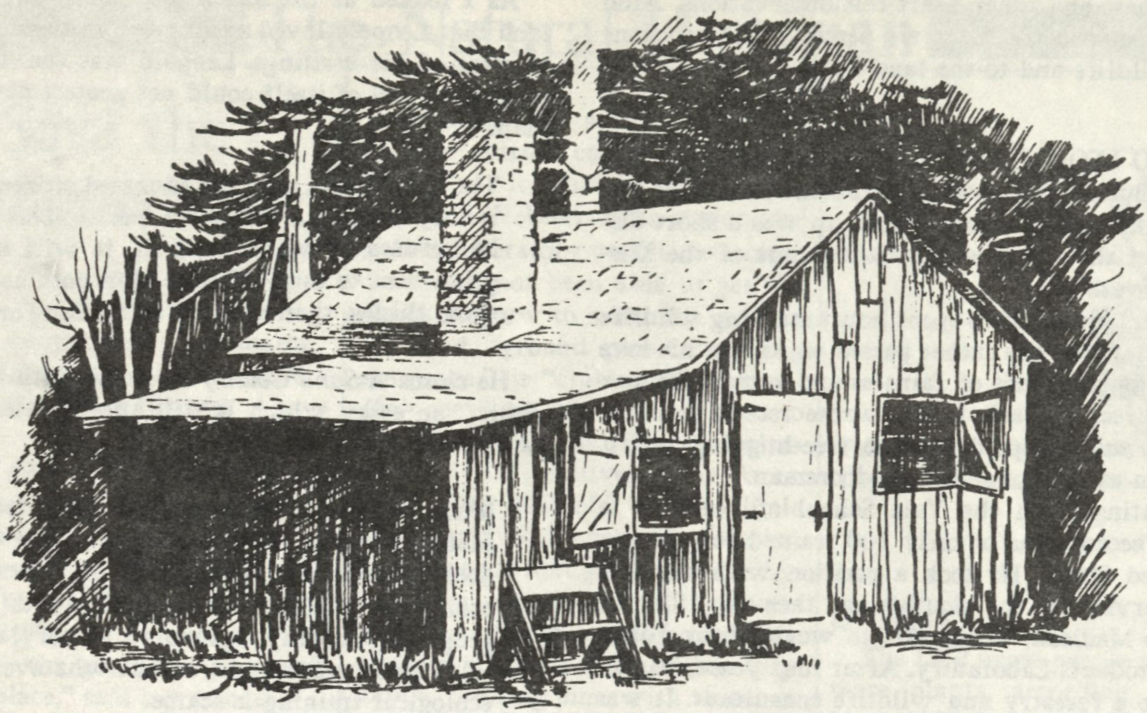


The Aldo Leopold Centenniel: A personal reflection

by

Steven O. Fish

Assistant Director

Information and Education

A FEW MONTHS AGO, at a conference in Madison, Wisconsin, I had an experience that will remain a part of me for years to come.

It was announced one morning that we would be taking a field trip to a very special place about 25 miles from the conference center. We were to visit a shack that was the focal point of a 1,000-acre preserve dedicated to the memory of Aldo Leopold.

I remember the excitement I felt, now that I was actually going to see the shack and the land where Aldo Leopold lived and worked from 1933 until his death in 1948. But, who was this man and why did these vestiges of his life stir in me such strong emotions?

ALDO LEOPOLD WAS A MENTOR, a teacher, and -- some would say -- a genius. I never met him, but he was as real to me as any teacher I ever had. My introduction to Aldo Leopold came in college when I read selections from *A Sand County Almanac.* Little did I know that this book would profoundly affect my attitudes and my career.

In that book, Leopold spoke of the joy and beauty of the changing seasons, of wildlife and the land. In a short essay, "Thinking Like a Mountain," Leopold shares an experience he had as a young man. A mother wolf and her pups suddenly appeared near Leopold's encampment.

"In those days," he relates, "you never passed up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy. We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes -- something known only to her and to the mountain. I was young then, and full of trigger-itch."

With these and other heart-felt observations, Aldo Leopold reshaped the way we perceive our relationship to wildlife and to the land itself.

ALDO LEOPOLD was born on January 11, 1887, in Burlington, Iowa. The house where the future forester and naturalist grew up was a short distance from the marshes and backwaters of the Mississippi River.

Aldo and his brothers spent hours stalking wildlife in these marshes. His father passed on to him his love for hunting and sense of fairness and respect for living creatures. As Jack Lewis wrote recently in the *EPA Journal*, "Leopold was no tree-hugging wimp. He was an avid hunter and outdoorsman."

Graduating from the Yale School of Forestry in 1909, he became one of only 100 trained foresters in the United States. He took a position with the U.S. Forest Service in the Southwest, then in 1924 he moved to Madison, Wisconsin, to work at the Forest Service Products Laboratory. After four years, he quit to become a forestry and wildlife consultant. It was during this time that he wrote *Game Management*, which became the standard text on the subject.

As a result, he was offered a chair as the first professor of game management in the U.S. at the University of Wisconsin in 1933. The University is in Madison, a short distance from "Sand County." This area attracted Leopold, and he looked for an inexpensive place where he could spend his weekends and free time. He did find a place and he did buy it, much to the dismay of his family. It was no more than an old chicken coop on worn-out, virtually treeless land. It was perfect.

The coop became the shack where Leopold would bring his family, away from the hustle and bustle of downtown Madison. He would write here and observe the beauty of nature. *A Sand County Almanac* chronicled the passing of one year on his farm, recording his thoughts and his teaching.

WE APPROACHED THE SHACK on the same road Leopold traveled some 40 years earlier. I wondered what the barren, treeless, sandy-soiled farm would look like. Suddenly, before us was the preserve, with the shack a short distance down a tree-lined dirt road. There were trees everywhere, trees that Leopold himself had planted with meticulous care. There was the marsh that he mentions in the *Almanac*, and then the shack itself. This symbol of the man I somehow felt I knew stood almost exactly the way he left it that morning in April, 1948, when he went to fight a grass fire not far from his farm. He died of a heart attack that morning after being overcome by smoke.

As I looked at the shack and gazed out over the land that Leopold loved so much, my mind drifted off to some of his writings. Leopold was convinced th ecology in and of itself could not protect nature from man.

> The question is, does the educated citizen know he is only a cog in a ecological mechanism? . . . that if he refuses to work with it, it will ultimately grind him to dust? If education does not teach us these things, then what is education for?

He closes *A Sand County Almanac* with "The Land Ethic," an essay which is still appropriate today. He wrote:

> Much higher education seems deliberately to avoid ecological concepts. An understanding of ecology does not necessarily originate in courses bearing ecological labels; it is quite likely to be labeled geography, botany, agronomy, history, or economics. This is as it should be, but whatever the label, ecological training is scarce.

ALDO LEOPOLD'S 100TH BIRTHDAY is being celebrated throughout the United States during 1987. A scientist, professor, philosopher, and writ Leopold was an influential and eloquent spokesman for conservation, environmental quality, and the value of pure wilderness. We remember him today with respect and gratitude. ■

Aldo Leopold — Commemorative Year 1987

The Natural Historian

Save the Princess Pine

by
Carol Davidge
Public Information Coordinator
The Connecticut State Museum
of Natural History

I FIRST SAW a Christmas wreath made of princess pine hanging above the mantel at the home of some friends. I asked where I could buy one, because it was one of the most beautiful I'd ever seen. "We made it -- the greenery grows all over the place," said my friend.

Since then I've admired numerous such decorations that appear at this holiday season. Therefore, it was a rude shock to learn from Leslie Mehrhoff, the state biologist at DEP, that princess pine is in danger of declining and should not be picked.

EACH LITTLE PLANT requires about six years to replace itself, and even then it will grow only in perfect conditions, usually in moist, shady places. "I've seen places where the plant has been killed by logging that exposed its growing area to intense light. Afterward, there was no evidence of rapid recolonization," said Terry R. Webster, professor of biology at The University of Connecticut, and a botanist interested in lower plant groups.

Although several species of *Lycopodium* grow in Connecticut, the princess pine (*Lycopodium obscurum*) is at greatest risk. Looking like a tiny Christmas tree and colored the darkest emerald green, it looks the most dramatic in holiday decorations. "If some commercial venture started cutting this beautiful plant it could be in real danger," said Webster. Even under controlled laboratory conditions, scientists have not been able to get the plants to grow to maturity.

© 1987, Connecticut Museum of Natural History.

Called "ground pine," "trailing evergreen," or "club moss," *Lycopodium* goes back 300 million years to the Carboniferous Period, when some of its relatives were trees. "The trees died off but the little guys survived," observed Webster. The varieties that grow here are *Lycopodium obscurum*, the princess pine, which has underground rhizomes or stems; *Lycopodium digitatum*, running pine, with rhizomes above ground; and *Lycopodium lucidulum*, shining pine or club moss. All are attractive in making holiday decorations, and should not be picked. The name *Lycopodium* comes from the Greek lycos (wolf) *pous* (foot), which is a somewhat mysterious appellation.

"These plants are very interesting," said Webster. "People see them in the woods every time they go out, and yet very little is known about their life cycle." Scientists cannot get them to grow up to be the little tree-like plants that we see in the woods. As yet, only about one percent survive the first phase of life in test tubes, under perfect growing conditions. "In no case has the life cycle been carried through from spore to mature plant, so all we have is what's out there in the woods," he said.

ALTHOUGH THERE ARE 400 species of this plant worldwide, the reproduction process is known for only 28 species. The princess pine is especially difficult to understand because maturing takes so long and its reproductive organs are underground, making its life processes very difficult to study.

Princess Pine
(*Lycopodium obscurum*)

The DEP urges people not to pick these plants, according to Nancy Murray, biologist and data manager for the Connecticut Natural Diversity Data Base of the Connecticut Geological and Natural History Survey at DEP. "Although no law protects these plants, they are considered at risk from picking by humans," she said.

The Victorians used princess pine extensively for Christmas decorations, and if there is another surge of popularity for Victorian decorating, "we could be in trouble," said Webster. We should not repeat the mistakes of the past; until more is known about these lovely plants, the best care we can give them is to leave them where they grow, in moist, shady forest and not as decorations in our homes. ■

(The illustration of *Lycopodium obscurum* is reprinted with permission from *How to know the Ferns and Fern Allies*, Wm. C. Brown Company, Dubuque, Iowa.)

Pictured here is an excavation site of a metal hydroxide sludge pit in Stratford. This material will be removed and sent to a secure landfill out of state.

Real Estate Transactions and Hazardous Waste

Text and photos
by
Jack Gelting
Senior Environmental Analyst
Hazardous Materials Management Unit

DEP OFFICIALS WATCHED as giant backhoes scooped goopy, grayish-white metal hydroxide sludge from an enormous hole in the earth. Groundwater flowed into the hole, creating a small pond. A layer of the sludge could be seen on the walls of the excavation, a striking contrast to the brown earth above and below. Workmen, with shovels and dewatering pumps, worked in protective clothing amidst the deafening roar. Tractor trailer trucks awaited loading of their hazardous cargo. A gate in a chain link fence was opened so one of the trucks could exit and begin the journey to a secure hazardous waste disposal site. The fence marks the property line of this Fortune 500 company at the edge of the Quinnipiac River in Wallingford.

This scene was the site of a one-million-dollar cleanup which took place in November of 1986. During World War II, bombs were plated on this site, with the waste being diposed of on-site in a "lagoon," or pit. The lagoon was paved over after the war.

The cleanup of this site was made possible by a 1985 Connecticut law. The one-acre sludge pit was discovered as a result of an environmental audit, or site assessment. The audit was required by the state when a change of ownership occurred.

IN 1985, the Connecticut State Legislature passed Public Act 85-568, an important act which bears on transfers of real estate where hazardous waste has been managed. This act is commonly referred to as the "transfer bill," or "negative declaration," the latter referring to those sites which have not been subect to a release of hazardous waste. As a direct result of this bill, thousands of tons of sludge and contaminated soil have been extracted from the Connecticut subsurface.

The scope of this act is contingent on the definitions of *(1) establishment*, *(2) transfer, and (3) hazardous waste.* An *establishment*, for the purpose of determining applicability, is considered a commercial facility which generates 100 kilograms of hazardous waste monthly, or which accepts and manages another's hazardous waste. Public Act 87-475 has expanded the definition to include any facility which has generated 100 kilograms of hazardous waste per month after 1967. Also, dry cleaners, furniture strippers, auto body shops, and painting operations are now considered *establishments.* A *transfer* is a transaction resulting in a significant change in ownership. *Hazardous waste* is defined elsewhere in the General Statutes in Section 22a-115. A waste is considered hazardous if it demonstrates one or more of the following characteristics: ignitability, corrosivity, reactivity, and toxicity. Notably, gasoline and waste oils are not included in the definition.

IF AN ESTABLISHMENT is transferred, one of three forms must be filed. The first two are "negative declarations," submitted by the seller to the buyer and the state. Form I states that no release of hazardous waste has occurred. Form II states that a release has occurred, but that this release has been cleaned up in a satisfactory manner. Form III is a certification by a party to the transfer who agrees to mitigate or minimize the effects of any release of hazardous waste to the environment.

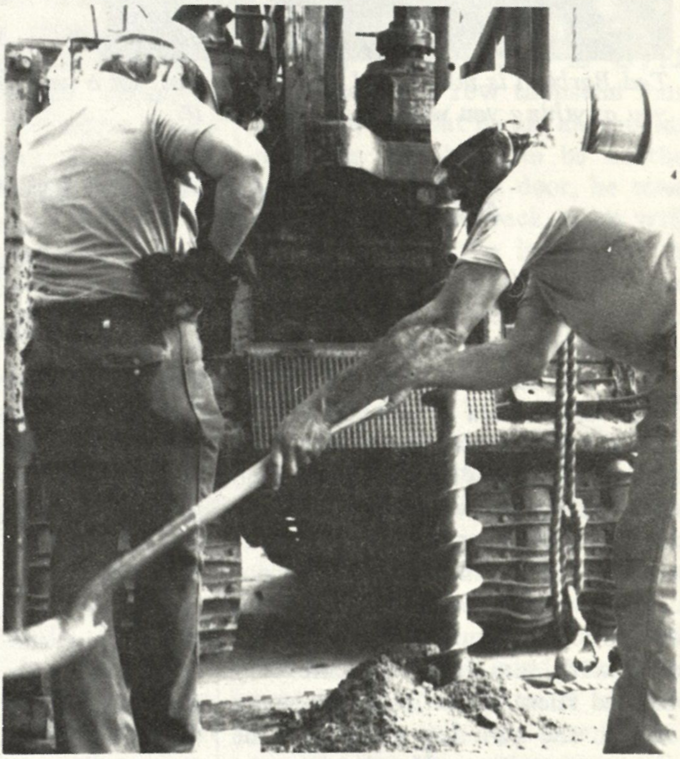
Overall, the results of the "transfer bill" have been very positive for the regulated facilities. Managers of facilities which are regulated by this act are often suprised and pleased to find that it does not mean long delays in completing transfers of ownership. When the delays do occur, they arise when lending institutions and insurers refuse to finance a property without a site assessment. Because of this, it may seem at times that the act serves as much to protect the insurer as the buyer. In fact, however, the act has come to be a source of security for all involved. Owners of regulated facilities are happy, since the state now sets clear guidelines which do not require expensive consultants to understand. The insuring parties like it because they can now rely on the specialized expertise of the state in monitoring site assessments. It may be, however, that in this case too much reliance is placed on the state, particularly in the situations of Forms I and II, where no state action is required.

Also, in addition to the control over real estate transfers which PA 85-568 now requires, the DEP's current guidelines on contaminated soil removal and disposal are also widely relied upon, followed, and applauded. Without these guidelines, cost projections for the cleanups would be arbitrary.

SITE ASSESSMENTS are performed by geotechnical engineering firms, whose expertise varies widely. The state does not certify or approve environmental auditors, though in fact there is legislation calling for a feasibility study of a state licensing system. A site assessment should include soil borings and monitor-well installations to determine the extent of subsurface and groundwater contamination. Certainly larger companies should undertake environmental auditing for their own protection. Money can be saved by minimizing waste and improving environmental management practices.

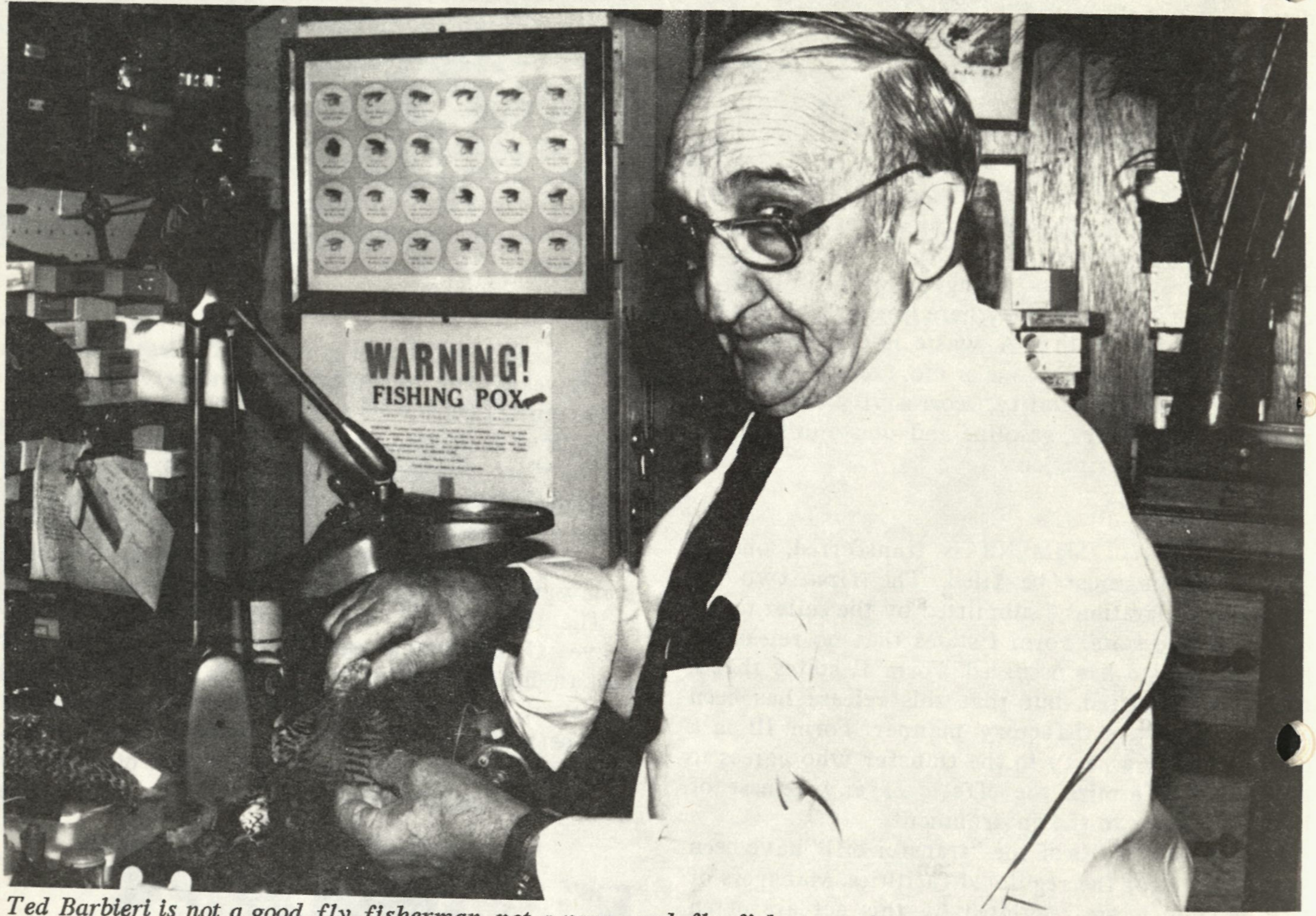
AS OF SEPTEMBER 16, 1987, less than two years after the Act became effective, a total of 369 transfer forms had been filed with the DEP's Hazardous Materials Management Unit. Of those, 120 forms were certifications by facilities which were required to do a cleanup. The remaining 249 forms were negative declarations. HMMU's limited staff is ordering the priority of these cases according to the statewide groundwater classification system.

The transfer bill has enormous potential to improve Connecticut's environment and to protect human health. This potential will only be realized, however, with the continued cooperation and good will between the state and the regulated community. The transfer bill is just one more example of what we can do by working together. ■



Workmen drill monitor wells for subsurface investigation of hazardous waste disposal.

DEP Profile



Ted Barbieri is not a good fly fisherman, not a very good fly fisherman, but a master fly fisherman. He'll tell you anything you want to know about it.

An Interview with the Master

Text and photo
by
Robert Paier

ONE BRIGHT SPRING DAY, oh, about a half-century or so ago, a 10-year-old boy was off on his own, doing what he loved to do best – fishing. Even at that age, he had already learned some of the closely guarded secrets of fly fishing; already he had learned a little bit how to "think like a fish." He had with him a set of carefully crafted flies, to challenge the wary fish in the swirling waters of the Connecticut River. He also brought with him, in a brown paper sack, a lunch of a sandwich, cookies, and a banana. The boy found a good spot, got himself set up and, suddenly, became aware of a hobo, one of many who made the rounds in those days. The hobo was alone, he was broke, and he looked hungry. Although the boy's family was doing alright, the boy understood that there are times when you just don't catch the breaks. So, with respect, he offered the man his lunch. Gratefully, with dignity, the hobo accepted, and he ate like a man who hadn't eaten for a long time. "You gave me something," he said. "Now I'll give you something in return." And he handed the boy a walking stick. The stick was a maze of intricately designed patterns and swirls and carved figures. It told of adventure in far off lands, of hard times and joyous times, a stick that told of humanity, its suffering and triumph. With the wonderful stick now passed on, the boy and the hobo went their separate ways.

The boy in that story was Ted

Barbieri. It happened a long time ago, but somehow you get the feeling he hasn't changed that much. And, of course, he still has that old walking stick.

TED BARBIERI is the executive assistant to DEP Deputy Commissioner Dennis DeCarli. He works within the Division of Conservation and Preservation. He brings to his position a lifetime of fishing and shooting and love of the outdoors. He has had successful careers in business and real estate, in public relations, and as an activist for sportsmen's and environmental groups.

"Although Ted's background is primarily in outdoor sports," says Deputy Commissioner DeCarli, "his range of interests includes all of the DEP's activities." Some of the areas in which Ted is involved are land acquisition, forestry, and parks, as well as being a liaison between the DEP and the governor's office. "Ted is unique, in that his innate talents and understanding of people cannot be learned. His sensitivity and loyalty to to the DEP and to the Division of Copnservation and Preservation have made his contribution invaluable." Is Ted Barbieri a yes-man? DeCarli smiles. "Well, sometimes, with a lot things happening, I can go off in a lot of directions at once. Ted doesn't hesitate to bring me back to earth."

THERE ARE, at very least, two Ted Barbieris. There is Ted Barbieri the little boy, the perpetual kid on his way to the old fishing hole, probably taking a day off from school to do it -- Ted Barbieri as Huckleberry Finn. Then there is Ted Barbieri the wizard, the sly, twinkly-eyed master craftsman, the magic man with just a little bit more knowledge of people and things than seems possible. And, when you think about it, maybe there really isn't so much difference between an inquisitive kid with a fishing pole and a wizard who is in on some very big joke. No difference except a few years.

TED BARBIERI is, among other things, a master fly fisherman. Not a good fly fisherman, not a *very* good fly fisherman, but a master fly fisherman. And, unlike most others into fly fishing, he will tell you anything you might want to know about it. Fly fishing is, by nature, a secretive kind of thing. You do it alone, painstakingly, with an eye on perfection. The little tricks involved are closely guarded. The fly fisherman uses strange and exotic materials, he collects feathers and furs and brightly-colored threads. Things go together ritualistically, in meticulously ordered sequences.

Ted's den is reached by going down a long, winding staircase, dropping down deep in the bowels of the earth. The room is filled with hundreds, even thousands, of carefully marked and cataloged boxes of fly-tying treasures, relics from half a century of research, fishing, and friendship. It is here that Ted performs his secret fly-tying operations, away from prying and less worthy eyes. Or so it would be if Ted were like most fly fishermen.

"I could never believe that fly fishing was only for the elite. Sharing with other people is the important thing. I'm not interested in keeping any secrets just for myself. This is for others to enjoy."

SHARING WHAT HE HAS with others. The little boy is still sharing his lunch. Which leads to another interesting aspect of Ted Barbieri. In addition to being apparently without enemies in this world, Ted is seen by more than a few people as a personal protector and guardian angel. He is known to be a guy you can go see anytime, tell your troubles to, get a smile and some good advice, and not worry about things going any further. Ted doesn't see anything very special about this. "I try to be honest and straightforward. It seems simple. Just do unto others. That's what my father taught me." Do unto others. Very simple. Everybody knows that.

But, that's getting a little serious. Ted Barbieri doesn't like to stay too serious too long about things, certainly not about himself. So, with a wink, he is back among the countless treasures in his den, his snake skins, old fishing rods, gifts from his many friends, everything with some story, everything emanating some noumenous energy. The wizard in his inner sanctum. The wizard who wants nothing more than to share his treasures of a lifetime of inquisitiveness.

THE INTERVIEW IS OVER. Ted has a few thousand more stories to tell, but he has an appointment, so it'll have to be another time. Going out the door, he tosses off one more wisecrack to his wife. At the time of the interview, the Barbieris were preparing to celebrate their 46th wedding anniversary. They still laugh at each other's jokes.

With a wave, Ted drives off. The weather is gorgeous. Not a cloud in the sky, and if it isn't the absolute bull's-eye peak of foliage coloration right now, then it can't possibly be more than 45 minutes away. A few horses romp in a field nearby. A squirrel peers from around a tree. Out in back, Ted's pond awaits the next bunch of kids to be initiated into the joys and mysteries of fishing. The sun shines warm and nice.

It's really a terrific day. ■

For Your Information

East Lyme Recycles

by
Toby Goodrich
Senior Environmental Analyst
Information and Education

(The following is extracted from a publication being prepared for release, titled *Recycling in East Lyme: A Program that Works.* To receive a copy of the complete report, please contact Toby Goodrich, Information and Education Section, Rm. 112, 165 Capitol Avenue, Hartford, CT 06106, or phone (203) 566-8108.)

EAST LYME is Connecticut's first town to reach the state's goal of 25 percent reclamation of the waste stream through recycling. East Lyme has set a standard for the state's other 168 municipalities. As we strive over the next four years to reach the mandated 25 percent weight reduction of municipal solid waste through recycling, it is important both to broadcast the news that a 25 percent goal is attainable and to analyze how East Lyme went about reaching that goal.

EAST LYME is a relatively small town whose resident population of 14,370 increases in the summertime to around 30,000. Like virtually all of Connecticut's municipalities, East Lyme's town government has provided garbage disposal services to its residents and businesses with a garbage dump in town. The current dumpsite off Roxbury Road has been operated by the town since 1948. Also in keeping with tradition in Connecticut, East Lyme's town government has monitored with some alarm the approaching loss of their landfill, the coming time when refuse can be piled no higher.

East Lyme's landfill receives an estimated 11,700 tons per year of mixed municipal waste. The fill-rate has been calculated at a monthly average of 1,732 cubic yards. This rate indicates complete fill-up and closure by mid-1988. East Lyme's future waste disposal options are predominantly out of town.

FIRST SELECTMAN Dennis Murphy holds meetings every Friday morning with planning and public works personnel involved with the town's recycling program. These meetings are occasions for the town's recycling work force to discuss progress and obstacles. Town Hall's efforts are made by the first selectman and Town Planner James Butler, public works support is led by Highway and Sanitation Superintendent Robert Beckett, and by Richard Swaney, who operates the town's recycling collection truck. Half-time employee Daniel Miller spends all of his time in the field, monitoring traffic into the town's landfill and campaigning throughout town for maximum participation. Miller's colleagues have bestowed on him the nickname "Dumpster Dan – the Bottle and Can Man." The priority given by the town's chief elected official to this team's job is very likely the most important reason for its success.

FROM 13 years' experience developing a recycling system in East Lyme some lessons may be heeded by anyone, in a small town or a large city, who hopes to build a program.

1. The recycling program needs full support and active participation by the municipality's chief elected official. This means a serious commitment of time.
2. "It's follow-up and feedback." Much of that time committed to recycling must be spent communicating personally and consistently with all parties involved, right down to the individual household.
3. Commit administrative staff and public works manpower to the tasks. Give them latitude. Meet regularly to discuss record-keeping, progress, and problems.
4. Take advantage of every opportunity to inform, educate, publicize. This must be an aggressive and sustained effort to communicate: to schools, through media, through mail, with personal meetings and speaking engagements.
5. Be vigilant and flexible in monitoring and responding to market conditions.
6. Take the time to stay up to date on other changes and developments, such as: research and development (i.e., plastics recycling, or centralized composting); regionalizing and intertown cooperation; developments in interstate coordination in New England.

FIRST SELECTMAN Dennis Murphy advises those planning to recycle, "Don't just talk about it. Do it." ■

Managing Connecticut's Harbors

by

Diane E. Giampa

Office of Planning and
Coordination/Coastal Management

Norwalk is one of a dozen communities which has become involved in designing coastal management plans. (*Photo: L.R. Johnston Assoc.*)

Connecticut's crowded harbors are being managed to preserve coastal resources.

IN 1984, CONNECTICUT passed the Harbor Management Act. It authorizes towns with navigable waters to establish special harbor commissions to prepare and enforce local harbor management plans under the supervision of the state's Coastal Management Program.

Harbor management planning enables towns to address and solve issues such as preservation of coastal resources and water-dependent uses, overcrowded harbors, availability of transient anchorage, encroachments into federal navigation channels, and lack of adequate disposal areas for dredged materials.

Establishing a plan gives a town more direct control over its harbor. Once the state formally approves a town's harbor management plan, the law requires that the state's regulatory decisions affecting that harbor be consistent with the town's adopted plan. If the state does not abide by the local plan, it must demonstrate why it is taking a different action. The U.S. Army Corps of Engineers has also agreed to consider the guidelines set out by approved harbor management plans when making its decisions on federal permits.

IN 1985, Coastal Management staff prepared and distributed *A Model Municipal Harbor Management Plan* to illustrate the process of harbor planning and to suggest what goals, policies, recommendations, and ordinances might be considered by the towns. To date, a dozen coastal municipalities have become involved in designing harbor management plans: Darien, East Lyme, Essex, Fairfield, the City and Town of Groton, Guilford, Milford, Noank, Norwalk, Stonington, and Waterford. Here are highlights from a few of those plans:

- Milford's harbor management plan, the first to receive approval by the State of Connecticut, was designed to address and resolve a variety of pressing harbor issues. The city has outlined steps to resolve the long-standing problem of encroachments into the federal navigation channel. In addition, Milford created a master water-use plan for the harbor that includes specific provisions for wetland and shellfish preservation. The plan also established a system to ensure that moorings would be available to the public on a first come, first served basis.
- Norwalk's harbor management plan will balance the diverse uses of the city's relatively shallow waters. The harbor contains roughly five miles of federal navigation channels, linking six petroleum tank farms, three sand and gravel storage areas, 10 independent commercial fishing operations, as well as a number of marinas. The city's plan, put into effect through changes in zoning along the waterfront, encourages new water-dependent uses, reinforces the protection of tidal wetlands and marshes, increases public access opportunities to the shoreline, and improves boating regulation.
- One of the objectives of the Noank harbor management plan is to provide for an equitable distribution of mooring space. The plan requires that 15 percent of the harbor area suitable for mooring be reserved for the use of residents, rather than commercial marinas. To improve traffic flow in the harbor, the town has also designated channels that must be kept free and clear of moorings and structures.

Harbor management plans provide smooth sailing for small craft in busy waters, as in Milford Harbor. (*Photo: Dan Rothenberg*)

- Stonington's offshore commercial fishing fleet is a prime tourist attraction, as well as an economic and historical asset to the town. With this in mind, Stonington has designed its harbor management plan to include improvements to the town dock and protection of the fleet. The plan also establishes "set-aside" areas to provide transient anchorage for visiting boaters and safe sailing and rowing space for small craft in the town's busy and popular harbor.

THE HARBOR MANAGEMENT planning process has served as a framework for resolving conflicts through compromise. It provides a forum for planners, regulators, administrators, and the people who use the harbors to work together to assure the viable future of these important resources. Towns interested in harbor management planning are encouraged to contact the DEP's Office of Planning and Coordination/Coastal Management to inquire about the availability of funding for these efforts. ■

The Bulletin Board

Shepaug Eagle Observation Area

Since the inception of the Shepaug Eagle Observation Area in 1985, both the DEP Wildlife Bureau and Northeast Utilities have sought to impose incremental modifications to improve the site. All modifications are designed to ensure the welfare of wintering bald eagles using the area, and to provide a quality educational experience to the general public.

All individuals and groups wishing to visit the site must make a reservation for a particular date. As of October 28, 1987, reservations will be taken Monday through Friday from 8:30 a.m. to 3:30 p.m. by calling the special program reservation number: (203) 566-7195. Only one reservation may be made per phone call. There will be a limited number of reservations available per open day. The Observation Area will be open from 9:00 a.m. to 1:00 p.m. on Wednesdays, Saturdays, and Sundays, from December 16, 1987, to March 13, 1988. Entry to the area will be by reservation only. Individuals and groups arriving at the site without reservations will not be admitted. ■

Museum of Natural History

The following events are planned at the State Museum of Natural History at The University of Connecticut in Storrs:

December 6: "An Ecological View of the Animals of Kenya: A Preview of the Museum's 1988 Trip to Africa," by Museum Director Carl W. Rettenmeyer; 3 p.m., in the Benton Connecticut Gallery, Jorgensen Auditorium, UConn, Storrs; free.

December 12: Children's Workshop, "Make Your Own Christmas Ornaments from Nature," 1-2 p.m., Wilbur Cross Building, UConn, Storrs; free to members, $2 for nonmembers; preregistration required; for children ages 9-12.

December 13: Lecture, "100 Years of Adventure and Discovery," by C.D.B. Bryan, author of the 100-year history of the National Geographic Society; 3 p.m. in the Benton Connecticut Gallery, UConn, Storrs; free; reception and book-signing follows lecture.

For further information, please call 486-4460. ■

Awards for the DEP

At the annual meeting of the Connecticut Chapter of The Nature Conservancy, which took place at the Goodspeed Opera House in September, 1987, the following members of the DEP were presented with certificates of special recognition:

To Commissioner Leslie Carothers, "articulate advocate for sound environmental policy and effective land preservation programs"; to Senior Environmental Analyst Diane Mayerfeld, Natural Resources Center, "for her faithful commitment and dedicated efforts on behalf of the preservation of natural areas, for her sensitivity to the working of the state, and for her coordination and enthusiastic promotion of the Natural Heritage Registry Program"; and to Senior Environmental Analyst Kenneth J. Metzler, Natural Resources Center, "for his valued advice to the Chapter's Stewardship Committee and his enduring willingness to evaluate tradelands, possible additions to preserves, and potential projects." ■

Orienteering Event

An orienteering event will be held at Metropolitan District Commission Reservoir Number 5, in West Hartford on Saturday, December 5, from 10 a.m. to noon. For further information on this and other orienteering events, please call Charlie DeWeese at 683-1979, or Sue and Paul Pearson at 745-7457. Those interested in the December event should call first in case of threatening weather. ■

Environmental Position

One of Connecticut's leading environmental associations, the Farmington River Watershed Association, is seeking an executive director. The FRWA addresses river issues through policy and education. The director administers a small staff and volunteers, sets programs, and raises funds. Five years experience in the field is desired. Send resume to: David Smith, FRWA, 749 Hopmeadow Street, Simsbury, CT 06070. ■

AIAI Events

The following events are planned at the American Indian Archaeological Insitute in Washington, Connecticut.

Saturday and Sunday, December 5 and 6, 1987 at 2:30 p.m. *Lucy in Disguise.* This 58-minute color documentary follows the discovery by Dr. Donald Johanson of a 3.5 million-year-old partial skeleton, affectionately named Lucy. The find sparked controversy, as Johanson and his supporters revised the theory of human evolution. ■

Leslie Carothers, Commissioner of the DEP, offered congratulations to four lifeguards who participated in the rescue of two potential drowning victims. The pulse and respiration of one victim had actually stopped when he was recovered.

Paul Kaufman of Oxford, Mark Kutis of Shelton, Stephen Kibby of Ridgefield, and Douglas Koekkoek of Haddam were the lifequards involved. Only Kibby and Koekkoek were on hand to accept their certificates in person. The other two have left the state, Kaufman to attend college in New Hampshire, and Kutis to serve with the U.S. Navy in San Diego.

In addition to certificates and letters from Commissioner Carothers, the four lifeguards recieved with letters from Governor William A. O'Neill, expressing his appreciation for their efforts. Pictured here, left to right, are Douglas Koekkoek, Commissioner Carothers, and Stephen Kibby.

Saturday and Sunday, December 12 and 13, 1987 at 2:30 p.m. *Legends of American Indians* describes tribal traditions, explains natural events, and expresses values of the people. Legends in this film represent the original stories of Indians in three different geographical regions of North America. This color film runs for 21 minutes.

Loon's Necklace: This 11-minute color film is the dramatization of an Indian legend of how the loon received his distinguished neckband – the gift of a magic necklace from a blind old man. Ceremonial masks, carved by Indians of British Columbia, establish the characters of the story and show the Native American's sensitivity to the moods of nature.

Saturday and Sunday, December 19 and 20, 1987, at 2:30 p.m. *Anglo-Saxon England.* This 22-minute color film traces English history from the end of Roman rule to the Norman invasion. Archaeological and historical sources document the connections between England and other parts of Europe.

Saturday and Sunday, December 26 and 27, 1987, at 2:30 p.m. In *Christmas Crackers*, Norman McLaren presents three whimsical stories with Christmas themes. This color film will run for eight minutes. *Toys* begins with the faces of children outside a toy store window at Christmas. A war toy appears and the viewer realizes that some games are played for keeps. This eight-minute color film has no commentary, but its emphasis is clear. War toys do not necessarily make warriors, but give false glamour to a deadly pursuit.

Admission to the AIAI is by membership or a donation of $2/adults and $1/children ages 6 - 18. AIAI is accessible to the handicapped. Senior citizens are invited to the Small World Film Festival feature each Monday at 2:30 p.m. as AIAI's guests. For further information, please call 868-0518. ■

Teacher of the Year

Nominations are being accepted for the national "Conservation Teacher of the Year" awards program, according to Denise Conkling, district manager of Hartford County Soil and Water Conservation District. The competition is open to all full-time teachers working at the kindergarten through high school level who have developed an outstanding program of conservation education.

The national conservation teacher of the year will receive $1,000 in cash and an expense-paid trip to Salt Lake City, Utah, for the 1989 annual convention of the National Association of Conservation Districts. The national second place winner will receive a $500 cash award, and the first place regional winner will receive $200.

Co-sponsored by NACD and the Deutz-Allis Corporation, the awards program encourages the development of creative learning experiences in conservation for young people. "Any teacher in a public or private school in our conservation district who puts emphasis on conservation as a regular part of the instructional program is eligible for nomination," said Conkling.

For further information, please call (203) 688-7725. ■

Hazardous Waste Hearings

The Connecticut Hazardous Waste Management Service is holding a workshop and public hearings on the draft *Hazardous Waste Generation and Management in Connecticut: A Status Report*. The draft report will provide updated information on hazardous waste generation and management in Connecticut, costs of waste management, availablity of in-state and out-of-state facilities and options for improved waste management. The purpose of the workshop is to present and discuss the information contained in the report; the purpose of the hearings is to provide the public an opportunity to offer testimony on the draft report.

The workshop will be held on December 7, 1987, from 2:00 to 4:00 p.m., at the Hartford Graduate Center in Hartford.

Public hearings will be held on December 15, 1987, from 3:00 to 5:00 p.m. and from 7:00 to 9:00 p.m., at the State Capitol, Room W-54. Other public hearings will be held on December 17, 1987, from 3:00 to 5:00 p.m. and from 7:00 to 9:00 p.m., in the Cheshire Room of the Sheraton Hotel in Waterbury.

For further information, please call the Connecticut Hazardous Waste Management Service at 244-2007. ■

Thames Science Center

The Thames Science Center in New London announces "Thames River Duck Displays: Winter Courtship" as part of the year-long monthly "Discovery Days" series of walks to natural sites in eastern Connecticut.

"Thames River Duck Displays" is scheduled for January 9, at 3:30 p.m. -- storm date: January 10, 3:30 p.m. Meet at the Thames Science Center. On a field trip following an introductory talk, participants will learn about the distinctive marking of hooded and common mergansers, common golden eye, canvasback, redhead, bufflehead, and lesser scaup, and observe the courtship displays of goldeneye and hooded mergansers as these ducks settle into Smith Cove in Waterford for the evening.

"Discovery Days" walks are scheduled each month through June. During the series, scientists and naturalists from the region will lead walks to natural sites in eastern Connecticut. Children under 12 must be accompanied by an adult. The walks are free to members of the Thames Science Center. The cost to non-members is $5 for adults, $3 for children. For further information on these and other events at the Thames Science Center in New London, call (203) 442-0391. ■

In an effort to help recognize the importance that recreation and leisure plays in all our lives and in recognition of the many excellent services and recreational facilities in Connecticut, Governor William O'Neill proudly proclaimed July as Recreation and Parks Month in Connecticut. In so doing, he commended the Connecticut Recreation and Parks Association for its continued support of a wide range of activities. Left to right: Robert Sousa, staff associate, Office of State Parks and Recreation; Susan Cooper, president, Connecticut Recreation and Parks Association; Governor William A. O'Neill; Leslie Carothers, commissioner, Department of Environmental Protection; Robert Dlugolenski, coordinator, State Park and Recreation Advisory Service.

Map of the Month

by
Alan Levere
Senior Environmental Analyst
Natural Resources Center

In the scheme of mapping, probably one of the most difficult techniques to master is the challenge of showing three dimensions -- length, width, and height -- on a two-dimensional piece of paper.

Here at the Map Sales Room of the Natural Resources Center, we are glad to report that such a map exists. It is *The Shaded Relief Map of Connecticut.*

The map is printed at a scale of 1:125,000. One inch represents approximately two miles. The map measures 44 by 55 inches.

The beauty of the map is in the fact that it was drawn as if the sun were shining from behind the hills, resulting in shadows being cast, and thus giving the effect of elevation. The eastern and western highlands, the central valley, and the coastal plain stand out dramatically, revealing the contours of the landscape in a nearly three-dimensional quality.

Due to the many requests and its continued popularity, *The Shaded Relief Map of Connecticut* is now in stock and in abundant supply.

To order please, send $6.30 (two copies: $10.60) to cover the map, tax, and handling to: DEP-NRC, Map Sales, Rm. 555, 165 Capitol Ave., Hartford, CT 06106

Also, don't forget the Natural Resources Center's collection of maps and publications when Christmas shopping is on your mind. Topographic, four-color maps of the state that measure 44" by 55" ($4.00), the layman's geologic guide, *The Face of Connecticut* ($12.95), and *The Guide to 73 Lakes and Ponds of Connecticut* ($4.65), all are in stock and available. Stop in to the Map and Publication Sales Office, Room 555 of the State Office Building at 165 Capitol Avenue in Hartford, or give us a call at 566-7719 -- Monday through Friday, 8:30 until 4:00. ■

Trailside Botanizer

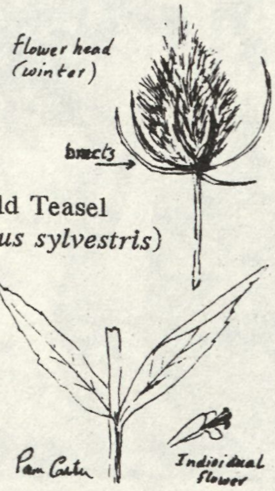
Wild Teasel

by
Gale W. Carter
Ilustration by
Pamela Carter

There is something unmistakable about the appearance of wild teasel (*Dipsacus sylvestris*) with its bristly oval-shaped flower heads. Even the stem and leaves have prickles. During the winter, the flower heads still retain their bristly appearance.

Wild teasel is a biennial, producing only a rosette of basal leaves the first year. The following year it develops paired leaves that join the stem to form cups, and its dense cluster of flower heads.

The flower is four-lobed and varies in color from pink to violet. Each flower is separated by spiny bracts, while the entire flower head is somewhat enveloped by several longer upcurving bracts. The flower heads may be up to two inches in width and four inches tall. Teasel blossoms from July to October.



Wild Teasel
(*Dipsacus sylvestris*)

The flower heads of teasel were once used by gypsy women as combs -- hence, one of its common names. The common name teasel comes from the Anglo-Saxon word "taesan." This means "to pull to pieces," or tease. Its generic name is derived from the Greek word "dipsakos," meaning "thirst."

Teasel was first introduced from Europe for use by weavers in handling wool. It has since become naturalized and is now found in old pastures, waste places, and along roadsides.

The literature is unclear as to the extent that wild teasel was used by weavers. It was undoubtedly used for teasing and carding wool, but there is some question as to its use for "fulling" -- beating the woolen cloth to raise the nap. Fuller's teasel (*Dipsacus fullonum*), a closely related cultivated species, seems to be a more likely choice, as it has much stronger bristles.

Wild teasel may have had other uses. The water that often collected in the cupped leaves was thought to be useful as an eye wash and a cosmetic. It was also thought to be useful for quenching the thirst of the weary traveler. Today, it is used in dried flower arrangements.

©1987, Gale W. Carter. ■

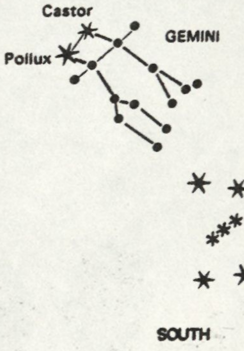
The Night Sky

by
Francine Jackson

With December upon us again, we're passing into a new season, this time, winter. At 4:46 a.m., EST, Tuesday, December 22, the sun will be at its lowest apparent position in the sky, the winter solstice. With luck, you may see the sun peeking through trees very low in the southern skies each day for about eight or nine hours this month; if you decide to weekend in Manhattan, the skyscrapers could conceivably block the sun during your stay – you would only see its apparent brightness overhead.

But, while we seem to be losing a sun, we are gaining a moon this month. By definition, a full moon is directly opposite, or 180 degrees from, the sun in the sky. On Saturday, December 5, after the sun has set low in the southwest, the moon will appear out of the northeast horizon. Because very little warmth is rising off the Earth to disturb the atmosphere, this moon will be sharp and clear. It will certainly earn its nickname, the Long Night Moon, standing as a beacon over the entire 16-hour night.

For some of you who might not enjoy gazing up at the night sky and seeing relatively little except the moon's glare, I've got a great surprise for you. Just one week after the full moon, on Monday, December 14, the Geminid meteor shower will appear. Many of you have undoubtedly heard of the Perseid shower in August. But the Geminids, despite receiving much less press, have a lot to offer. First of all, their constellation of origin, Gemini the Twins, is visible from sunset till dawn, so you should see a fair number of meteors no matter what time of night you go outside. This is unlike the Perseids, when the best show is generally after midnight. Through the years, meteor watchers have noticed that the number of Geminids seen each year has increased -- some authorities feel they might outnumber the Perseids this year -- so anyone going out to view the Geminids possibly could see quite a celestial show.



Of course, there still remains the one -- possibly deciding -- difference between the two showers: the Perseids are in August, which is generally warmer here than in December. However, if you don't let this minor inconvenience bother you and you dress accordingly, the night sky might reward your efforts beautifully. ■

Letters

I enjoy your magazine, but the photos are lousy.

John Stanton
Higganum

An excellent publication, but it needs to be better known.

Pauline B. Tyler
Glastonbury

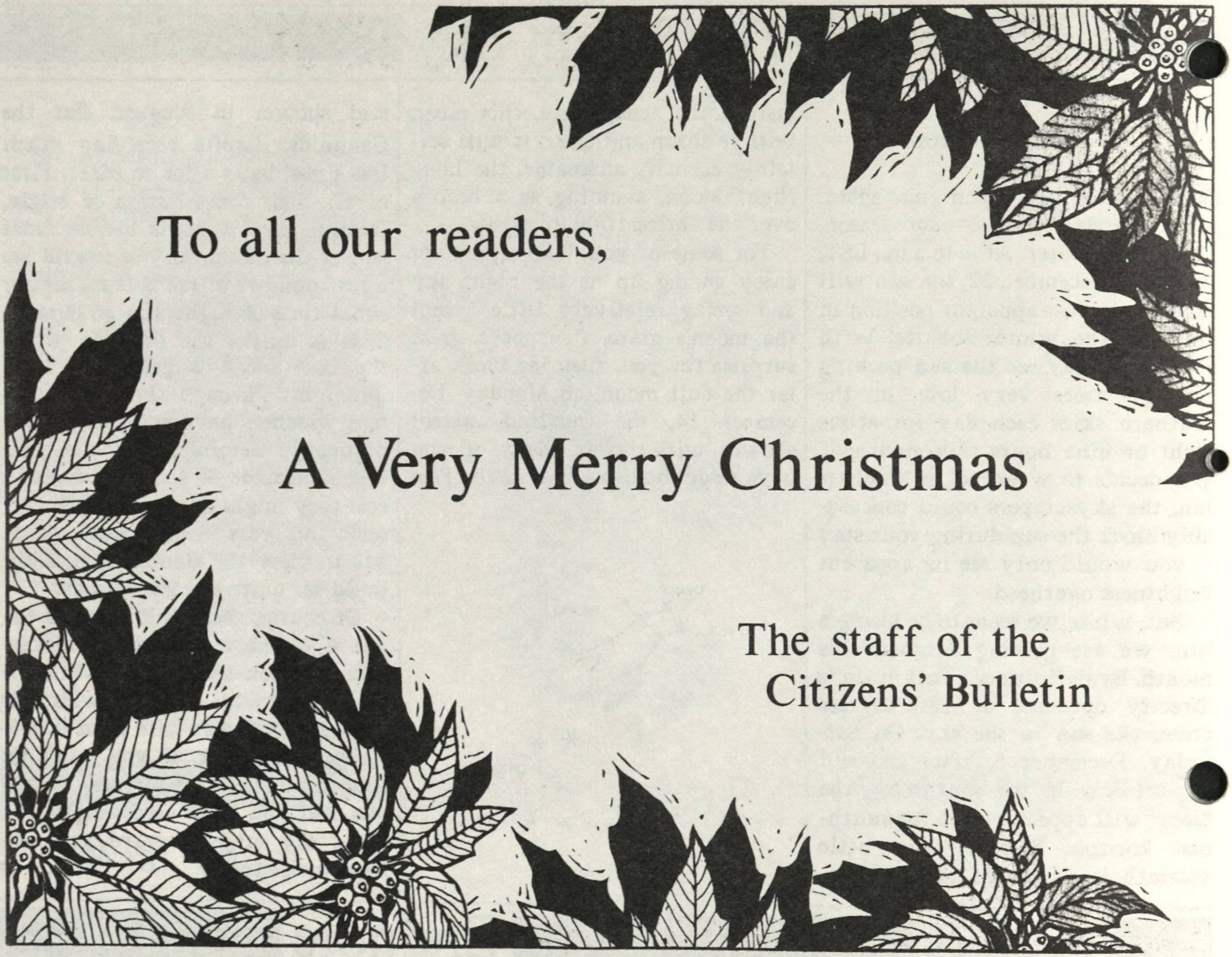
I enjoy especially articles about wildlife habitats and knowing about DEP-sponsored events. We went to the Bluff Point Discovery Walk last summer and loved it.

Lauren Churchill
Jewett City

Endnote

"So in America when the sun goes down and I sit on the old broken-down river pier watching the long, long skies over New Jersey and sense all that raw land that rolls in one unbelievable huge bulge over to the West Coast, and all that road going, all the people dreaming in the immensity of it, and in Iowa I know by now the children must be crying in the land where they let the children cry, and tonight the stars'll be out, and don't you know that God is Pooh Bear? the evening star must be drooping and shedding her sparkler dims on the prairie, which is just before the coming of complete night that blesses the earth, darkens all rivers, cups the peaks and folds the final shore in, and nobody, nobody knows what's going to happen to anybody besides the forlorn rags of growing old, I think of Dean Moriarty, I even think of Old Dean Moriarty the father we never found, I think of Dean Moriarty."

Jack Kerouac



To all our readers,

A Very Merry Christmas

The staff of the
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